Department of
Environmental Protection

Jeb Bush
Governor

Southeast District
400 N. Congress Avenue, Suite 200
West Palm Beach, Florida 33401

Colleen Castille
Secretary

December 21, 2005

Mr. Richard E. Bonner, P.E.
Deputy District Engineer for Project Management
U.S. Army Corps of Engineers
Jacksonville District
POST OFFICE BOX 4970
Jacksonville, Florida 32232-0019

Dear Mr. Bonner:

Enclosed is the permit (Permit No. 0236494-003-GL) for the Kissimmee Aquifer Storage and Recovery (ASR) Project, issued under the authority of the Comprehensive Everglades Restoration Plan Regulation Act (CERPRA), Chapter 373.1502, Florida Statutes (F.S.); Title 62, Florida Administrative Code (F.A.C.); and pursuant to the Department's authority under Chapters 373 and 403, Florida Statutes.

Please review this document carefully and make copies for the project site and all appropriate persons associated with the project. Please discuss the document with your staff, contracted/hired personnel, and applicable others to ensure compliance with the conditions and requirements contained therein.

Any party to this order (permit) has the right to seek judicial review of the permit under section 120.68 of the Florida Statutes, by the filing of a Notice of Appeal under rule 9.110 of the Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection, Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this notice is filed with the Clerk of the Department.

If you have any questions about this document, please contact Jose L. Calas at (561) 681-6693.

Sincerely,

Kevin Neal

Kevin Neal
Director of District Management
Southeast District

KN/tm/ks/jc

Department of Environmental Protection

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400 N. Congress Avenue, Suite 200
West Palm Beach, Florida 33401

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COMPREHENSIVE EVERGLADES RESTORATION PLAN REGULATION ACT (CERPRA) PERMIT- CONSTRUCTION AND CYCLE TESTING AUTHORIZATION

PERMITTEE:
U.S. Army Corps of Engineer
Jacksonville District
Post Office Box 4970
Jacksonville, Florida 32232-0019

ATTENTION:
Mr. Richard Bonner, P.E.
Deputy District Engineer
Project Management

Permit Number: 0236494-003-GL
Project: Lake Okeechobee ASR Pilot Project
Kissimmee River ASR Site
County: Okeechobee County

Date of Issue: December 21, 2005
Expiration Date: December 20, 2010

This permit is issued by the State of Florida Department of Environmental Protection (Department) under the authority of the Comprehensive Everglades Restoration Plan Regulation Act (CERPRA), Chapter 373.1502, Florida Statutes (F.S.); Title 62, Florida Administrative Code (F.A.C.); and pursuant to the Department's authority under Chapters 373 and 403, Florida Statutes. The activity is not exempt from the requirement to obtain a CERPRA Permit.

The above named permittee is hereby authorized to initiate the activities described on the application, associated drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof. Ths activities authorized by this permit must be conducted in conformance with all the provisions of this permit. Failure to comply with all permit conditions and documents referenced herein may constitute grounds for revocation of the permit and appropriate enforcement action.

This permit also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act, 14 U.S.C. § 1456, and constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. § 1341. Activities described in the related documents are not authorized until the project is determined to be in conformance with all applicable rules and with the general and specific conditions of this permit/certification/authorization, as specifically described below.

PROJECT DESCRIPTION:

This project is a Comprehensive Everglades Restoration Plan (CERP) Pilot Project, which was authorized by Congress under Section 601 of the Water Resources Development Act of 1999. Aquifer Storage and Recovery wells are proposed in order to maximize the benefits associated with the Kissimmee River. A pilot project for these wells is necessary to identify the most suitable sites for the aquifer storage and recovery wells and to determine the optimum configuration of those wells. The pilot project will provide information regarding the characteristics of the

aquifer system within the Kissimmee River site, as well as determine the hydrogeological and geotechnical characteristics of the upper Floridan Aquifer. The pilot project will also determine the specific water quality characteristics of waters to be injected, the specific water quality characteristics and the amount of water recovered from the aquifer, and the water quality characteristics of water within the receiving aquifer.

The project involves the construction and cycle testing of a 24-inch diameter Class V, Group 7 ASR well and associated surface water treatment, conveyance, and monitoring systems. The ASR well will be constructed to recharge, store, and recover water from the Upper Floridan Aquifer System (FAS), a confined aquifer ranging in depth between 600 to 1,000 feet below land surface (bls) at the project location. The Kissimmee River project site will include one 5-mgd ASR well with surface water treatment facilities designed to process approximately 5-mgd. The surface facilities including water intake in the Kissimmee River, pressure media filters, ultra-violet disinfection, re-aeration system, and associated pumps and piping. The raw surface water will be treated to primary drinking water standards via filtration and ultraviolet (UV) disinfection prior to ASR recharge into the FAS. During recovery, the water will be treated via aeration prior to discharge back to the Kissimmee River. The project will also include a total of three monitor wells. One of the monitor wells (OKF-100) has already been installed. This monitoring well located between 300 and 1000 ft from the ASR well will be converted to a dual zone well to monitor conditions in the upper and middle FAS. An additional dual zone monitoring well will be installed within 300 ft of the well to monitor the upper and middle FAS. One single-zone Surficial Aquifer System (SAS) monitor well will be installed within 300 ft of the ASR well.

This CERPRA Permit only authorizes construction and cycle testing of the Kissimmee ASR Pilot Project. The U.S. Army Corps of Engineers (Corps) is the federal sponsor of this project and is responsible for activities performed during the construction and cycle testing phases of this project. A separate long-term operational permit will be required if this ASR well becomes part of full-scale ASR implementation under CERP.

PROJECT LOCATION*:*

The Kissimmee ASR site is located approximately 1 mile north of the confluence of the Kissimmee River (C-38 Canal) and Lake Okeechobee. Coordinates of the site are:

- Latitude/Longitude 27°11’00”N/80°53’00”W
- Center of Section 12, Township 38 South, Range 34 East

Access to the site is via a paved access road that runs from highway 78 Northeast along the eastern bank of the Kissimmee River. The land is owned by the SFWMD. Upstream of the site, the S-65E structure regulates river discharge into Lake Okeechobee.

DECLARATION OF REASONABLE ASSURANCES:

In issuing this permit, the Department finds that the Corps has given reasonable assurances sufficient to satisfy the requirements of the Comprehensive Everglades Restoration Plan Regulation Act, Section 373.1502, F.S. The Department bases this finding on the following documents, listed by FDEP document number:

1) United States Army Corps of Engineers, Jacksonville District, Comprehensive Everglades Restoration Plan Regulation Act Permit Application for the Kissimmee River Aquifer Storage and Recovery Pilot Project (August 2, 2004);
2) United States Army Corps of Engineers, Jacksonville District, Response to Request for Additional Information from the Department (October 15, 2004);
3) United States Army Corps of Engineers, Jacksonville District, 90% Design Submittal for the Kissimmee River Aquifer Storage and Recovery Pilot Project (December 16, 2004). Final (100%) Design submittal pending;

4) United States Army Corps of Engineers, Jacksonville District, Draft Environmental Specifications for the Kissimmee River Aquifer Storage and Recovery Pilot Project (October, 2004). Final Project Manual pending;
5) Central and Southern Florida Projects, Comprehensive Everglades Restoration Plan Project Management Plan for the Kissimmee River Aquifer Storage and Recovery Pilot Project (January 2002);
6) Central and Southern Florida Projects, Comprehensive Everglades Restoration Plan Project Management Plan for the Aquifer Storage and Recovery Regional Study (May 2002);
7) Central and Southern Florida Project- Comprehensive Everglades Restoration Plan. Final Aquifer Storage and Recovery Pilot Project Design Report/ Final Environmental Impact Statement (September 2004).
8) Department Underground Injection Control (UIC) Exploratory Well permit (0200917-001-UC). Issued;
9) Department National Pollutants Discharge Elimination Systems (NPDES) permit. Pending;
10) Department UIC- Class V, Group 7 ASR System Construction Permit (0236494-001-UC/5X). Pending; and,
11) Department Petition for a Water Quality Criteria Exemption (0236494-002-UC/V1). Pending.
12) Information received on November 13, 2004 and a teleconference held on November 4, 2004 between USFWS, USACE, and FDEP.

In addition to the documents enumerated above, the Department also bases this finding on the following information:

13) Meeting held at the FDEP Southeast District office in West Palm Beach on October 28, 2004 with the United States Army Corps of Engineers, Jacksonville District

Specifically, there are reasonable assurances, pursuant to section 373.1502, F.S., that

- "The project component will achieve the design objectives set forth in the detailed design documents submitted as part of the application." This finding is based on documents 1 through 7.
- "State water quality standards, including water quality criteria and moderating provisions, will be met. Under no circumstances shall the project component cause or contribute to violation of state water quality standards." This finding is based on document 1 in its entirety with emphasis on the surface and groundwater characterization, and the treatment system; document 2 in its entirety with emphasis on aeration mechanism calculations; documents 3 and 4 in their entirety; and documents 9 through 12.
- "Discharges from the project component will not pose a serious danger to public health, safety, or welfare." This finding is based on document 1 in its entirety; document 2; documents 6 and 7; and documents 9 though 12.
- "Any impacts to wetlands or threatened or endangered species resulting from implementation of the project component will be avoided, minimized, and mitigated, as appropriate." This finding is based on document 1 in its entirety.

The Corps agrees to construct the project in accordance with the provisions of this permit and associated documentation. To the extent sovereign immunity has been waived under 33 U.S.C. §§ 1323 and 1344(t), the Corps' agreement to construct the project in accordance with the provisions of this permit and supporting documentation is an enforceable condition of this permit.

GENERAL CONDITIONS:

1. All activities approved shall be implemented as set forth in the drawings incorporated by reference and in compliance with the conditions and requirements of this document. The Corps shall notify the Department in writing of any anticipated changes in:

    A. operational plans;
    B. project dimensions, size or location;
    C. ability to adhere to permit conditions;

D. project description included in the permit;
E. monitoring plans; or,
F. environmental impacts

If the Department determines that a modification to the permit is required then the Corps shall apply for and obtain the modification. Department approval of the modification shall be obtained prior to implementing the change, unless the change is determined by the Department to reduce the scope of work from that authorized under the original permit, and will not effect compliance with permit conditions or monitoring requirements.

2. If, for any reason, the Corps does not comply with any condition or limitation specified herein, the Corps shall immediately provide the Department with a written report containing the following information:

A. a description of and cause of noncompliance;
B. the period of noncompliance, including dates and times;
C. impacts resulting or likely to result from the non-compliance;
D. steps being taken to correct the non-compliance, and;
E. the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Compliance with the provisions of this condition shall not preclude the Department from taking any enforcement action allowed under state law with respect to any non-compliance

3. The Corps shall obtain any applicable licenses, permits, or other authorizations, which may be required by federal, state, local or special district laws and regulations. Nothing herein constitutes a waiver or approval of other Department permits or authorizations that may be required for other aspects of the total project.

4. Nothing herein conveys to the Corps or creates in the Corps any property right, any interest in real property, any title to land or water, constitutes State recognition or acknowledgment of title, or constitutes authority for the use of Florida's sovereign submerged lands seaward of the mean high-water line or an established erosion control line, unless herein provided, and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State.

5. Any delineation of the extent of a wetland or other surface water submitted as part of the application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this authorization or a formal determination under section 373.421(2), F.S., provides otherwise.

6. Nothing herein authorizes any entrance upon or activities on property which is not owned or controlled by the Corps or local sponsor, or conveys any vested rights or any exclusive privileges.

7. This document or a copy thereof, complete with all conditions, attachments, modifications, and time extensions shall be kept at the work site of the authorized activity. The Corps shall require the contractor to review this document prior to commencement of the authorized activity.

8. The Corps specifically agrees to allow Department personnel with proper identification, at reasonable times and in compliance with Corps specified safety standards access to the premises where the authorized activity is located or conducted for the purpose of ascertaining compliance with the terms of this document and with the rules of the Department and to have access to and copy any records that must be kept; to inspect the facility, equipment, practices, or operations regulated or required; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance. Reasonable time may depend on the nature of the concern being investigated.

9. At least forty-eight (48) hours prior to the commencement of authorized activity, the Corps shall submit to the Department a written notice of commencement of activities indicating the anticipated start date and the anticipated completion date.

10. If historic or archaeological artifacts such as, but not limited to, Indian canoes, arrow heads, pottery or physical remains, are discovered at any time on the project site, the Corps shall immediately stop all activities which disturb the soil and notify the Department and the State Historic Preservation Officer.

11. Within a reasonable time after completion of construction activities authorized by this permit, the Corps shall submit to the Department a written statement of completion. This statement shall notify the Department that the work has been completed as authorized and shall include a description of the actual work completed. The Department shall be provided a copy of any as-built drawings required of the contractor or survey performed by the Corps.

SPECIFIC CONDITIONS:

1. **Instructions to Contractors.** The permittee shall ensure that the permit conditions are explained to all construction personnel working on the project and shall give a copy of this permit to each contractor and subcontractor before the authorized work begins. Prior to construction, the permittee shall schedule a pre-construction meeting for attendance by the contractor(s), and representatives from the U.S. Army Corps of Engineers, the Department, the SFWMD, and other environmental regulatory agencies. The Department shall receive at least two weeks' notice of the meeting. The proposed construction schedule shall be provided at the pre-construction meeting.

2. **Addresses.** Reports and notices submitted to the Department in accordance with this permit shall be submitted to the Department's Division of Water Resource Management, Water Quality Standards and Special Projects Program, 2600 Blair Stone Road, MS 3560, Tallahassee, Fl 32399-2400, telephone no. (850) 245-8416, and to the Department's Southeast District Office, 400 North Congress Avenue, Suite 200, West Palm Beach, Florida, 33401, telephone no. (561) 681-6600.

Construction

3 Authorized Construction: This permit authorizes construction of the Comprehensive Everglades Restoration Plan Kissimmee River ASR Pilot Project in accordance with the 90% Plans submitted to the Department on December 16, 2004. The permittee shall submit final (100%) plans to the Department for review and approval at least 30 days prior to initiating construction activities

4. **Construction Best Management Practices.** At all times during the construction, the permittee shall use best management techniques for erosion and sedimentation control. All graded areas shall be stabilized and vegetated immediately after construction to prevent erosion. The permittee shall take all reasonable precautions to minimize the suspension and transport of soils, levee materials, and roadway materials into waters adjacent to or downstream of the construction site in accordance with Sections 1355A and 1356A of the Draft Project Manual for this project. The permittee shall submit the Final Project Manual to the Department for review prior to initiating construction activities.

5. **Turbidity Monitoring.** Effective means of turbidity control, such as, but not limited to, turbidity curtains, shall be employed during all operations that may create turbidity so that it shall not exceed 29 NTU's above background in the Kissimmee River. Turbidity screens shall be placed and maintained around the work area (work cell) to confine turbidity generated by dredging operation to contain turbid water within "work cells". All screens, sheet pile, and other turbidity control devices shall remain in place until all turbidity has subsided and meets state standards.

   Turbidity monitoring equipment and personnel trained to use it shall be available on site at all times during construction or maintenance activities that could result in project-generated turbidity levels beyond the work areas. For monitoring purposes, the work area is that area defined by the turbidity curtained "cell(s)". The permittee shall monitor turbidity levels at least once every four hours during all operations that may create turbidity (unless monitoring data shows this to be excessive) as follows.

   A. Monitoring samples shall be taken at the surface at the following locations:

1. Background Sample(s): One background sample station, at least 1000 feet upstream of the work area, in the Kissimmee River, outside any visible plume generated by the construction; and

2. Compliance Sample(s): Monitoring station located in the Kissimmee River adjacent to the work area, no more than 225 feet down current from the work area within the densest portion of any visible plume.

B. Turbidity monitoring results shall be compiled daily and summarized quarterly (every three calendar months) by project. Beginning with the first calendar month that construction occurs that could generate turbidity in waters adjacent to the construction sites and continue until all construction is completed. Monitoring data with supporting documents shall be submitted to the Department quarterly during the period of actual construction. The reports shall clearly identify the following information:

1. Permit number;

2. Dates and time of sampling and analysis;

3. A statement describing the methods used in collection, handling, storage and analysis of the samples;

4. A clear description of project activities taking place at the time of sampling;

5. A map indicating the sampling locations; and

6. A statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.

C. Monitoring reports shall also include the following information for each sample that is taken:

1. Water depth

2. Depth of sample

3. Weather conditions

4. Water level stage and direction of flow.

In the event that project-generated turbidity levels beyond the work areas exceed the standard (29 NTU's above background), project activities contributing to elevated turbidity levels shall immediately cease, and the Department shall be notified immediately. Work shall not resume until the work can be conducted in compliance with the aforementioned turbidity standard.

6. **NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities. .** The issuance of this Permit does not constitute coverage under the National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP) pursuant to Rule 62-621.300(4)(a), F.A.C. Permittee is advised to contact the Department's NPDES Stormwater Program at (850) 245-7522 or toll free at (866) 336-6312 or to download application information at http://www.dep.state.fl.us/water/stormwater/npdes/construction3.htm#permit prior to the commencement of any construction.

7. **NPDES General Permit for the Discharge of Produced Ground Water from any Non-Contaminated Site Activity:** The issuance of this Permit does not constitute coverage under the NPDES General Permit for the Discharge of Produced Ground Water from any Non-Contaminated Site Activity pursuant to 62-621.300(2), F.A.C. If any offsite discharges will occur due to construction dewatering activities, then coverage under the aforementioned General Permit may be required and the permittee is advised to review Rule 62-621.300(2), F.A.C. Before discharge of produced ground water can occur, analytical tests on samples of the proposed discharge water shall be performed to determine if contamination exists. If the analytical results comply with applicable criteria for use of the General Permit, then a short summary of the proposed activity and copy of the analytical tests shall be sent to the addresses in Specific Condition No. 2 within one week after discharge begins and the permittee may proceed with the project while abiding by all conditions of the General Permit.

8. **Dewatering.** If any discharges will occur due to construction dewatering activities, the permittee shall submit site-specific dewatering information to the Department for review and approval at least 30 days prior to commencement of dewatering activities. The plan shall include at a minimum: a site plan of the project with the location of the proposed discharge point(s) and their associated water quality monitoring locations; the location and type of turbidity control devices and methods necessary to ensure state water quality standards will be met; calculations estimating the area of influence of dewatering; the depth of dewatering, pumpage rates, duration and volumes; and any proposed methods of construction. If dewatering will not be retained onsite also include documentation that the dewatering activities will meet the criteria contained in the "Basis of Review for Water Use Permit Applications within the South Florida Water Management District – August 31, 2003" with emphasis on Section 2.5.2(4).

9. **Facility Testing and Maintenance**. In order to ensure operational readiness, initial testing may be needed by the construction contractor for the facilities authorized by this permit. Operational readiness requirements for ASR injection/recovery pump stations as well as the water treatment equipment may include periodic operation, as necessary, to maintain their mechanical integrity. Therefore, temporary short-term operation of the ASR injection/recovery pump stations or other facility equipment for maintenance purposes is allowed provided related discharges are consistent with the conditions of applicable permits.

10. **As-Built Certification and Record Drawings.** Within 60 days after completion of the construction contract for this project, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law. The statement of completion and certification shall be based on on-site observation of construction or review of as-built drawings for the purpose of determining if the work was completed in compliance with permitted plans and specifications. Additionally, if deviation from the approved drawings is discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. A registered surveyor shall certify all surveyed dimensions and elevations.

Operations and Maintenance

11. **Operation, Maintenance, Repair, Replacement, and Rehabilitation Manual.** No less than 30 days prior to completion of the project, the permittee shall submit a draft Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Manual to the Department at the addresses listed in Specific Condition No. 2.

12. **Initiation of Operations.** The permittee shall notify the Department at the addresses listed in Specific Condition 2 upon initiation of the cycle testing phase.

13. **Cycle Testing Phase.** The cycle testing phase shall be conducted in accordance with Appendix E (Cycle Testing Plan) of the Kissimmee River permit application dated July 2004 by the U.S. Army Corps of Engineers. Any modifications or refinements to the proposed cycle testing plan shall be submitted to the Department for review and approval. The cycle testing will be allowed to continue for a period of time longer than 2 years as may be needed to collect representative data necessary for achieving the objectives of the pilot projects and the regional study. Notification of the completion of the initial cycle testing and monitoring period should be provided to the Department at the addresses listed in Specific Condition No. 2.

14. **Use of Polymers/Chemical Coagulants.** If the permittee intends to use any polymers/chemical coagulants during the recovery period, the polymer/chemical coagulants must be approved by the Department prior to its use. In order to obtain approval, the permittee shall provide documentation demonstrating that the treatment system is wholly contained and that the polymer/chemical coagulant will not be introduced into waters of the state.

15. **Cessation of Operation.** If at any time during operations, monitoring data (except for specific conductivity during the first cycle test, see Specific Condition 18 collected in accordance with Specific Condition 16 (Tables 1 and 2) exceed the applicable Class III water quality criteria as specified in Chapter 62-302, F.A.C. at the discharge location, or the applicable groundwater standards as specified in Chapter 62-520, F.A.C. at the ASR well, then the permittee shall immediately notify the Department and take a second confirmatory sample within 24 hours of identifying the exceedance. The permittee shall notify the Department within 24 hours of receipt of the confirmatory sampling results. If the second sample complies with the applicable standards, then project

operations may proceed as planned. If the second sample does not comply with the applicable standards, then the permittee and Department will coordinate to determine the appropriate plan of action. This plan of action may include, but is not limited to: cessation of operations; issuance of a moderating provision; additional monitoring; or initiation of a risk assessment.

Monitoring Program

16. **Monitoring Requirements**. During the cycle testing phase, the permittee shall perform water quality and quantity monitoring in accordance with Tables 1and 2. The permittee shall report the results to the Department in accordance with the reporting requirements specified in Specific Conditions 26 and 27. Compliance with the monitoring requirements of this permit does not exempt the permittee from compliance with monitoring requirements contained in other permits for this project. In accordance with Subsection 373.1502(3)(b)(2), F.S., under no circumstances shall the project component cause or contribute to violations of state water quality standards set forth in Rule 62-302, F.A.C.

17. **Mercury Monitoring**. During the recovery phase, the permittee shall perform the following mercury monitoring in addition to that required by Tables 1 and 2.

    A. At a minimum, unfiltered surface water samples should be collected immediately upstream and downstream of the project on a monthly basis and analyzed for THg and MeHg. This sampling should continue for one month following completion of each cycle test.

    B. The permittee shall evaluate the data for compliance with the following action levels. If either of the action levels is exceeded, then additional fish tissue monitoring will be required in accordance with Specific Condition 17.C.

        1. MeHg concentrations at the downstream site are not significantly greater than MeHg concentrations at the upstream site.

        2. THg or MeHg concentrations at the ASR well during recovery are not significantly greater than THg or MeHg concentrations at the upstream site.

    C. If data indicates that either of the action levels in Specific Condition 17.B. are exceeded, then the permittee shall collect mosquitofish (to total at least 100 fish) in the receiving waters and physically composite them into one sample and analyze for THg (note, a single aliquot should be analyzed per composite).

    D. If monitoring data indicates that operation of the ASR Pilot Project has significantly increased mercury methylation in the receiving waters, then the permittee shall notify the Department. The Department and permittee may then develop an adaptive management plan or initiate a scientific assessment of the benefits and risks of the ASR Pilot Projects with regards to mercury.

18. **Mixing Zone Requirements.** Based on the proposed cycle testing plan, it has been determined that a mixing zone will be necessary for specific conductivity during a short period near the conclusion of the first cycle test. The mixing zone will extend a maximum of 800 meters downstream of the point of discharge. Prior to any discharge, the permittee will provide all necessary information to determine the actual size of the mixing zone that will be required based on the expected flow conditions in the receiving waters at the time of discharge and the maximum specific conductivity level and flow rate of the discharge. Upon determination of the mixing zone boundaries, the permittee shall submit any information necessary to demonstrate that compliance can be achieved at the edge of the mixing zone.

    The mixing zone will only be applicable during a short (less than 30 day) period during the first cycle test when the specific conductance levels of the discharge exceeds the water quality criteria established in Rule 62-302.530(23), F.A.C. Discharge of water exceeding the specific conductivity water quality criteria will only be allowed when the base flow in the receiving waters is at or above the minimum flow required to assure that the specific conductivity criteria will be achieved at the edge of the mixing zone as determined by the mixing zone evaluation.

Upon completion of the first cycle, compliance with the specific conductivity criteria will be required at the discharge location.

19. **Displaced Ground Water During Monitoring.** In order to obtain a representative sample from the formation water, a minimum of three casing volumes must be displaced before collecting the sample. Prior to any monitoring efforts during this permit, the permittee shall provide the Department with a plan for the proper disposal of these volumes of formation water for review and approval.

20. **Routine Toxicity Testing**. A determination of the toxicity of the ASR recovered water shall be conducted during each cycle testing period in accordance with the following protocol:

    A. Effluent Limitation

        1. Whole effluent acute toxicity shall not exceed in any "routine" or in any "additional follow-up" test an LC50 of less than 100% effluent. [Rule 62-302.200(1), Rule 62-302.500(1)(a)4 and Rule 62-4.244(3)(a), F.A.C.]

    B. Monitoring Frequency

        1. "Routine" toxicity tests shall be conducted once every two months for the duration of each cycle test starting with the second day of the recover phase of the cycle unless a reduction in the frequency of monitoring is granted in writing by the Department.

        a. Upon completion of six consecutive, valid "routine" tests that demonstrate compliance with the effluent limitation in A.1. above, the permittee may submit a written request to the Department for a reduction in monitoring frequency. The Department shall review this request within 45 days of receipt and approve or deny the request in writing. Materials submitted to the Department for review should include a summary of the data and the complete bioassay reports for all tests being considered. In no case shall the frequency of monitoring be reduced to less than annually. Requested reductions in monitoring shall only become effective upon Department approval.

        b. If a test within a sequence of the six is deemed invalid, but is replaced by a repeat valid test initiated within seven days of the invalidation, the invalid test will not be counted against the requirement for six consecutive valid tests for the purpose of evaluating the reduction of monitoring frequency. If two or more invalidations occur, this provision does not apply.

    C. Test Requirements

        1. Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent.

        2. Additional Follow-up Tests, if required:

            (a) If a routine test does not meet the acute toxicity limitation in A.1. above, the permittee shall conduct two additional follow-up tests on each species that failed the test.

            (b) The first and second additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5% and 6.25% effluent. All test results shall be statistically analyzed according to the Appendices in EPA-821-R-02-012.

            (c) The first test shall be initiated within two weeks of the end of the failed routine test. The remaining additional follow-up test shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

        3. The permittee shall conduct 96-hour acute static renewal multi-concentration toxicity tests using the daphnid, **Ceriodaphnia dubia**, and the bannerfin shiner, **Cyprinella leedsi**, concurrently.

        4. All test species, procedures and quality assurance criteria used shall be in accordance with Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event

the above method is revised and adopted by Department rule, the permittee shall conduct acute toxicity testing in accordance with the revised method.

5. The control water and dilution water used will be moderately hard water as described in EPA-821-R-02-012, Table 7, or the most current edition.

D. Sampling Requirements

1. Routine tests hall be conducted on four separate grab samples collected over the recovery period in order to catch any peaks of toxicity associated with changes in effluent quality as indicated in changes in specific conductance levels. The first sample will be collected on the second day of the recover phase of the cycle. The second and third samples will be collected when the daily specific conductance measurements of the recovered water increases by one-third and two-thirds of the difference between the day-two conductivity and 1275 µmhos/cm, respectively. The fourth grab sample will be collected during the final two days of recovery or when the daily specific conductance measurement reaches or exceeds 1275 µmhos/cm, which ever occurs first.

2. The two additional follow-up tests, if required, will be conducted on two separate grab samples collected following a failed routine test. The grab sample for the first additional follow-up test will be collected within one-week of the end of the failed routine test. The collection of grab samples for the additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed. Results for each additional test shall include the determination of LC50 values with 95% confidence limits.

E. Quality Assurance Requirements

1. A standard reference toxicant (SRT) quality assurance (QA) acute toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or no greater than 30 days before the date of each routine or additional follow-up test conducted. The SRT-QA data shall be submitted with each companion routine or additional follow-up test required.

2. If the mortality in the control (0% effluent) exceeds 10% for either species in any test, the test for that species (including the control) shall be invalidated and the test repeated.

3. If during any routine separate grab sample test, 100% mortality occurs prior to the end of the test and control mortality is less than 10% at that time, that test (including the control) shall be terminated with the conclusion that the test fails.

4. Additional follow-up tests shall be evaluated for acceptability based on the concentration-response relationship as required and described by EPA-821-R-02-012, Section 12.2.6.2.

F. Reporting Requirements

1. Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

   (a) Routine Test Results: If an LC50> 100% effluent occurs in all four separate grab sample tests for the test species, ">100%" should be entered on the DMR for that test species. If in any of the four separate grab sample tests for the test species a LC50 < 100% effluent occurs, the lowest calculated LC50 effluent concentration shall be entered on the DMR for that test species.

   (b) Additional Follow-up Test Results: Report the calculated LC50 value for that test species.

2. A bioassay laboratory report for the routine test shall be prepared according to EPA-821-R-02-012, Section 12, Report Preparation and Test Review and mailed to the Department at the address below within 30 days of the completion of the test.

3. For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-012, Section 12, and mailed within 45 days of completion of the second valid additional follow-up test. If any additional follow-up test, or two consecutive routine tests, do not

meet the effluent limitation specified in 1.a. above, the permittee shall contact with the Department within 30 days of the laboratory report submittal to discuss the corrective actions necessary to remedy the observed acute toxicity.

4. All bioassay reports shall be submitted to the Department at the addresses listed in Specific Condition No. 2.

G. Alternative Methodology. The Department understands that a protocol is being developed during Phase 1 (Screening-Level Method Development) of the "Preliminary Investigation of the Ecotoxicological Effects of Recovered ASR Water on Receiving Water Ecosystems" (SOW C-C13401P-WO07). Once the methods are developed under the Phase 1 effort, the developed methods shall be provided to the Department for review and approval. Be aware that if the study recommends testing in any species other than those approved by EPA in 40 CFR 136 for whole effluent toxicity testing in NPDES permits, these test organisms and any modification to the approved methods must be approved by EPA before they can be considered. If the recommended organisms are not approved by EPA they cannot be used for permit compliance, nevertheless, they could provide valuable information to the Regional Study goals and can be pursued to augment the information obtained by the approved methods.

21 Specific Conductivity Toxicity Testing. Toxicity testing is to be conducted during the first cycle test in accordance with the Cycle Testing Plan to determine the toxicity effects of the mixed recovered water under variable specific conductance ranges.

A. Monitoring Frequency

1. This toxicity testing shall commence when the specific conductance exceeds 1275 micromhos/cm and shall continue once every five days for the duration of the 15 day discharge event or once every six days if the event is scheduled for greater than 15 days.

2. The specific conductance and the ionic components of the reclaimed water (Cl, Ca, Mg) shall be analyzed concurrent with the toxicity testing.

B. Test Requirements
Toxicity testing shall be conducted in accordance with Specific Condition 20.C.

C. Sampling Requirements
All tests will be conducted on a single grab sample.

D. Quality Assurance Requirements
Quality Assurance shall be performed in accordance with Specific Condition 20.F.

E. Reporting Requirements

1. Results from the first cycle test shall be submitted in a single bioassay report prepared according to EPA-821-R-02-012, Section 12, Report Preparation, or the most current edition, and mailed to the Department within 90 days of completion of the cycle test. Specific conductivity measurements and ionic components shall be reported concurrently with the associated bioassay report.

2. All bioassay reports shall be provided to the Department at the addresses listed in Specific Condition No. 2.

F. Alternative Methodology
Alternative methodologies will be addressed as described in Specific Condition 20.H.

22. **Related Monitoring and Analysis.** In addition to the monitoring activities required by this permit, the permittee will keep the Department informed regarding monitoring activities associated with the CERP ASR Regional Study. The Department and permittee acknowledge that these activities are designed to address regional CERP ASR implementation issues beyond the scope of the Kissimmee ASR Pilot Project, and that these

regional monitoring activities may change in scope based on the adaptive assessment method that CERP is based upon. These regional monitoring activities currently include:

- baseline ecological and surface water quality monitoring
- baseline groundwater quality and level monitoring
- characterization of native microbial populations in aquifers
- ecotoxicological studies

The permittee will provide the results of the aforementioned monitoring activities and related studies to the Department in accordance with Specific Condition No. 2.

23. **Quality Assurance and Quality Control.** Sampling and monitoring data shall be collected, analyzed, reported and retained in accordance with Chapter 62-160, F.A.C. Any laboratory test required by this permit shall be performed by a laboratory that has been certified by the Department of Health (DOH) under Chapter 64E-1, F.A.C., where such certification is required by Rule 62-160.300, F.A.C. The laboratory must be certified for all specific method/analyte combinations that are used to comply with this permit. The analytical method used shall be appropriate so as to determine if the sample complies with Class I and Class III surface water quality standards as specified in Chapter 62-302, F.A.C., and groundwater standards as specified in Chapter 62-520, F.A.C., whichever is more stringent. All field activities including on-site tests and sample collection, whether performed by a laboratory or another organization, must follow all applicable procedures described in DEP-SOP-001/01 (February 1, 2004). Alternate field procedures and laboratory methods may be used if they have been approved according to the requirements of Rules 62-160.220, and 62-160.330, F.A.C.

24. **Method Detection Limits (MDLs).** The sample collection, analytical test methods and method detection limits (MDLs) applicable to this permit shall be performed and reported in accordance with Rule 62-4.246, F.A.C. A list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantification limits), which is titled "Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" dated June 21, 1996, is available from the Department on request. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. The Department recognizes that due to the pilot nature of this project, more stringent MDLs and PQLs may be necessary for the evaluation of specific parameters effect on the environment, consequently, the referenced MDLs and PQLs are not intended to place a lower limit in the analytical methods that this project may require.

25. **Treatment Evaluation.** Prior to initiation of cycle testing, the permittee will prepare and submit to the Department a detailed monitoring and evaluation protocol for the project treatment facilities for review and approval. Upon approval, the evaluation of the treatment system shall be reported to the Department as per Specific Condition Nos. 26 and 27.

26. **Water Quality Monitoring Reports.** All water quality submittals required by Specific Condition No. 16 of this permit, shall be submitted to the Department upon completion of each cycle test. The cycle test reports are to be received by the Department no later than 90 days following the completion of each cycle test. In addition to the permit number and name of the permit administrator, the reports shall contain, at a minimum, the following information:

    1. Date, location, and time of sampling or measurements;
    2. Person responsible for performing the sampling or measurements;
    3. Dates analyses were performed or the appropriate code as required by Chapter 62-160, F.A.C.;
    4. Person responsible for performing the analyses;
    5. Analytical techniques or methods used, including MDL;
    6. Results of such analyses, including appropriate data qualifiers;

7. Depth of samples;
8. Flow conditions and weather conditions at time of sampling; and,
9. Monthly flow volumes.

27. Technical Update Meetings. During the construction and cycle testing phases, the permittee shall arrange Technical Update Meetings with the Department approximately once per quarter, depending on project activities, detailing the progress of the project. During these meetings, the permittee will update the Department on all of the activities described in Specific Condition No. 22 or any other activities relevant to the pilot project(s). The permittee shall provide the Department with any meeting related materials (e.g., data summaries, reports) as far in advance of the meeting as possible (preferably two weeks in advance). The permittee shall prepare meeting minutes following each Technical Update Meeting and provide to the Department no later than two weeks after the meeting.

28. **Factors Outside the Permittee's Control.** In the event that non-compliance or failure to perform as designed occurs for any reason other than those listed below, the permittee shall take appropriate remedial measures.

    A. Natural Background. Deviations from water quality standards may occur as a result of natural background conditions, in accordance with Section 403.021(11), F.S.

    B. Random Variation. The permittee shall report any statistical uncertainty in the methodology using acceptable scientific methods.

29. **Removal of Parameters.** Upon demonstration (based on data from a minimum of 2-3 cycles) that a specific parameter(s) is not present or is found consistently in compliance with Class III Water Quality Standards, the permittee may request a modification to the monitoring program. Parameters will be examined by the Department on a case-by-case basis to determine whether reducing the monitoring frequency or waiving the monitoring requirement for a specific parameter is appropriate.

30. **Addition of Parameters.** If the Department has reason to believe that additional parameters exist that may cause or contribute to water quality violations in the project area, those parameters shall be added to the monitoring section of this permit as a permit modification.

31. **Emergency Suspension of Sampling.** Under hurricane, tropical storm warnings, or other extreme weather conditions, the permittee's normal sampling schedule may be suspended if necessary. The permittee shall notify the Department's Southeast District and the Water Quality Standards and Special Projects Program at the addresses and telephone numbers listed in Specific Condition No. 2, above, of any anticipated sampling suspension associated with hurricanes, tropical storms, or other extreme weather events that may require deviation from the normal sampling schedule. Within 14 days following the cessation of emergency conditions, the permittee shall notify the Department of when normal sampling is expected to resume.

Renewal and Modifications

32. **Permit Modifications.** The permittee shall submit proposed modifications of the Kissimmee River ASR Pilot Project to the Department, prior to implementation of the modification, for review and approval by the Department.

33. **Permit Renewal.** At least 60 days prior to the expiration of this permit, the permittee shall apply for renewal of this permit. Renewal may be for a period of up to 5 years in accordance with Subsection (3)(g) of the CERPRA.

34. **Department Review and Approval.** Where conditions in this permit require Department review of remedial actions or plan modifications to be implemented pursuant to this permit, the Department will consult with the permittee to ascertain whether mutual agreement can be reached. If mutual agreement on the remedial actions or plan modifications cannot be reached, the action of the Department will be deemed final agency action and will be subject to judicial or administrative review, as appropriate.

CONSUMPTIVE USE LIMITING CONDITIONS:

1. Water use classification: Aquifer Storage and Recovery Pilot Test

2. Source Classification: Ground Water From: Florida Aquifer System

Surface Water From: SFWMD Canal (C-38)

3. Annual allocation shall not exceed 1,825 MG. Maximum monthly allocation shall not exceed 155 MG.

4. Failure to comply with this or any other condition of this permit constitutes a violation and pursuant to Rule 40E-1.609, Suspension, Revocation and Modification of Permits, the Department may suspend or revoke the permit.

5. Withdrawal Facilities:

Proposed Withdrawal Facility – Ground Water
Source: Florida Aquifer System
1 – 23' X 1230' X 3500 GPM Well Cased to 560 feet.
Proposed Withdrawal Facility – Surface Water

Source: SFWMD Canal (C-38)

1 – 24" X 300 HP X 4000 GPM vertical turbine pump

6. Permittee shall mitigate interference with existing legal uses that was caused in whole or in part by the permittee's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1 in 10 year drought event that results in the:

1. Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or

2. Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.

7. Permittee shall mitigate harm to existing off-site land uses caused by the permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the Department will require the permittee to modify withdrawal rates or mitigate the harm. Harm as determined through reference to the conditions for permit issuance, includes:

1. Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In case where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)

3. Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive uses; or

4. Land collapse or subsidence caused by reduction in water levels associated with consumptive use.

8. Permittee shall mitigate harm to the natural resources caused by the permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the Department will require the permittee to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:

1. Reduction in ground or surface water levels that results in the harmful lateral movement of the fresh water/salt water interface;
2. Reduction in water levels that harm the hydroperiod of wetlands;
3. Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond;
4. Harmful movement of contaminants in violation of state water quality standards; or
5. Harm to the natural system including damage to habitat for rare and endangered species.

9. If any condition of the permit is violated, the permit shall be subject to review and possible modification, enforcement action, or revocation.
10. Authorized representatives of the Department shall be permitted to enter, inspect, and observe the permitted system to determine compliance with special conditions.
11. The permittee is advised that this permit does not relieve any person from the requirement to obtain all necessary federal, state, local and special district authorizations.
12. The permit does not convey any property right to the Permittee, nor any rights and privileges other than those specified in the Permit and Chapter 40E-2, Florida Administrative Code.
13. Permittee shall submit all data as required by the implementation schedule for each of the limiting conditions to Florida Department of Environmental Protection, Southeast District, 400 N. Congress Avenue, Suite 200, West Palm Beach, Florida 33401 to the attention of Jose L. Calas.
14. In the event of a declared water shortage, water withdrawal reductions will be ordered by the District in accordance with the Water Shortage Plan , Chapter 40E-21, F.A.C. The Permittee is advised that during a water shortage, pumpage reports shall be submitted as required by Chapter 40E-21, F.A.C.

Executed in West Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Kevin Neal

Kevin Neal
Director of District Management
Southeast District

KN/tm/jc

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this, including all copies, were mailed or emailed before the close of business on December 21, 2005 , to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, with the designated Department Clerk, receipt of which is hereby acknowledged.

Linda Ischayat 12/21/2005
Clerk Date

cc: Pauline Smith, U.S. Army Corps of Engineering (email)
Mark Shaffer, U.S. Army Corps of Engineering (email)
Eric Bush, U.S. Army Corps of Engineers (email)
Peter Kwiatkowski, South Florida Water Management District (email)
Robert Verrastro, South Florida Water Management District (email)
Richard Nevulis, South Florida Water Management District (email)
John Mitnik, South Florida Water Management District (email)
Ernie Barnett, South Florida Water Management District (email)
Linda McCarthy, FDACS, West Palm Beach (email)
Steve Schubert, FWS (email)
Steve Gilbert, FWS (email)
Jerry Brooks, Tallahassee (email)
Frank Nearhoof, FDEP, Tallahassee (email)
Greg Knecht, FDEP, Tallahassee (email)
Temperince Morgan, FDEP, Tallahassee (email)
Kenny Hayman, FDEP, Tallahassee (email)
John Outland, FDEP, Tallahassee (email)
Kimberly Shugar, FDEP, West Palm Beach (email)
Jose Calas, FDEP, West Palm Beach (email)

TABLE 1 Kissimmee ASR Pilot Project Cycle Testing	Recharge Mode - Monitoring Parameters and Frequencies				
	ASR Well	SMW-1 Monitor Well	FAS Monitor Wells		
			FMW-1	FMW-2 Upper	FMW-2 Lower
Physical Parameter					
Flow Rate and Volume Parameters					
Total daily flow (million gallons)	D	NA	NA	NA	NA
Cumulative total volume (million gallons)	M	NA	NA	NA	NA
Pressure Parameters (ASR Well)					
Daily average injection pressure (psig)	D	NA	NA	NA	NA
Monthly average injection pressure (psig)	M	NA	NA	NA	NA
Static Wellhead Pressure (monitor wells)					
Daily average pressure (psig)	NA	D	D	D	D
Monthly average pressure (psig)	NA	M	M	M	M
Analytical Parameters					
All Primary, Sec. and Min. Criteria	A	NA	NA	NA	NA
chloride (mg/l)	B+W	W	W	W	W
specific conductance (micromhos/cm)	B+W	W	W	W	W
total dissolved solids (mg/l)	B+W+E	W	W	W	W
temperature (Deg C)	B+W+E	W	W*	W*	NA
pH (SU)	B+W+E	W	W*	W*	W*
arsenic (μg/l)	B+W+E	NA	B+M*+W**	B+M*+W**	B+M*+W**
gross alpha (PCI/l)	B+W+E	NA	B+M*+W**	B+M*+W**	B+M*+W**
total coliform (CFU/100 ml)	B+W+E	NA	B+W*	B+W*	B+W*
fecal coliform (CFU/100 ml)	B+W+E	NA	B+W*	B+W*	B+W*
e-coli (CFU/100 mlM)	M***	NA	M***	M***	NA
giardia lamblia (Giardia/l)	M***	NA	M***	M***	NA
cryptosporidium (Crypto/l)	M***	NA	M***	M***	NA

TABLE 1 (CONT.) Kissimmee ASR Pilot Project Cycle Testing	Recharge Mode - Monitoring Parameters and Frequencies				
	ASR Well	SMW-1 Monitor Well	FAS Monitor Wells		
			FMW-1	FMW-2 Upper	FMW-2 Lower
total organic carbon (mg/l)	M	NA	M*	M*	NA
Clostridium perfringens (CFU/100 ml)	M***	NA	M***	M***	NA
Coliphage (PFU/100 ml)	M***	NA	M***	M***	NA
enterrococci (MPN/100 ml)	M***	NA	M***	M***	NA
cyanobacteria (units/ml)	M***	NA	M***	M***	NA
turbidity (NTU)	B+W+E	NA	NA	NA	NA
total suspended solids (mg/l)	B+W+E	NA	NA	NA	NA
dissolved oxygen (mg/l)	B+W+E	NA	NA	NA	NA
iron (mg/l)	B+W	NA	NA	NA	NA
color (PCU)	B+W	NA	NA	NA	NA
total mercury (µg/l)	B+W+E	NA	NA	NA	NA
methyl mercury (µg/l	B+W+E	NA	NA	NA	NA
total phosphorus (µg/l)	B+W+E	NA	NA	NA	NA
sulfate (mg/l)	B+W+E	M	M	M	M

Note: "**B**" means baseline sample to be collected within one day of initiating recharge, "**D**" means daily, "**W**" means weekly, "**M**" means monthly, **"E"** means sample collected within 2 days of the completion of recharge, "**Q**" means quarterly, "**A**" means annually, "**NA**" means not applicable, "**+**" indicates the combination of two or more monitoring frequencies.

***** Monitoring only required following the determination that the front of the injected water has reached that particular monitor well as indicated by a decreasing trend in measured chloride or specific conductance levels resulting in more than a 10% decrease in the levels of these parameters from the levels measured during the first week of recharge.

****** Increased monitoring frequency only required if the Safe Drinking Water Standards (i.e., 10 ppb and 15 pCi/L for arsenic and gross alpha, respectively) are exceeded.

******* Monitoring only required if total and fecal coliform are detected at that particular monitoring location.

TABLE 2 Kissimmee ASR Pilot Project Cycle Testing	Recovery Mode - Monitoring Parameters and Frequencies				
	DISCHARGE POINT	SMW-1 Monitor Well	FAS Monitor Wells		
			FMW-1	FMW-2 Upper	FMW-2 Lower
Physical Parameter					
Flow Rate and Volume Parameters					
Total daily flow (million gallons)	D	NA	NA	NA	NA
Cumulative total volume (million gallons)	M	NA	NA	NA	NA
Static Wellhead Pressure (monitor wells)					
Daily average pressure (psig)	NA	D	D	D	D
Monthly average pressure (psig)	NA	M	M	M	M
Analytical Parameters					
chloride (mg/l)	D	W	W	W	W
specific conductance (micromhos/cm)	D	W	W	W	W
total dissolved solids (mg/l)	B+W	W	W	W	W
temperature (Deg C)	B+W	W	W	W	NA
pH (SU)	B+W+E	W	W	W	NA
arsenic (μg/l)	B+W+E	NA	B+M*+W**	B+M*+W**	B+M*+W**
gross alpha (PCI/l)	B+W+E	NA	B+M*+W**	B+M*+W**	B+M*+W**
total coliform (CFU/100 ml)	B+W+E	NA	B+W*	B+W*	B+W*
fecal coliform (CFU/100 ml)	B+W+E	NA	B+W*	B+W*	B+W*
e-coli (CFU/100 ml)	M***	NA	M***	M***	NA
giardia lamblia (Giardia/l)	M***	NA	M***	M***	NA
cryptosporidium (Crypto/l)	M***	NA	M***	M***	NA
total organic carbon (mg/l)	M	NA	M*	M*	NA

TABLE 2 (CONT.) Kissimmee ASR Pilot Project Cycle Testing	Recovery Mode - Monitoring Parameters and Frequencies				
	DISCHARGE POINT	SMW-1 Monitor Well	FAS Monitor Wells		
			FMW-1	FMW-2 Upper	FMW-2 Lower
Clostridium perfringens (CFU/100 ml)	M***	NA	M***	M***	NA
Coliphage (PFU/100 ml)	M***	NA	M***	M***	NA
enterrococci (MPN/100 ml)	M***	NA	M***	M***	NA
cyanobacteria (units/ml)	M***	NA	M***	M***	NA
turbidity (NTU)	B+W+E	NA	W	W	NA
total suspended solids (mg/l)	B+W+E	NA	NA	NA	NA
Dissolved oxygen (mg/l) – measured after the aerator	B+W+E	NA	NA	NA	NA
iron (mg/l)	W	NA	NA	NA	NA
color (PCU)	W	NA	NA	NA	NA
total mercury (µg/l)	B+W****	NA	NA	NA	NA
methyl mercury (µg/l)	B+W****	NA	NA	NA	NA
total phosphorus (µg/l)	B+W+E	NA	NA	BA	NA
sulfate (mg/l)	B+W+E	M	M	M	NA

Note: "**B**" means baseline sample to be collected within one day of initiating recovery, "**D**" means daily, "**W**" means weekly, "**M**" means monthly, **"E"** means sample collected within 2 days of the completion of recovery, "**Q**" means quarterly, "**A**" means annually, "**NA**" means not applicable, "**+**" indicates the combination of two or more monitoring frequencies.

***** Monitoring only required following the determination that the front of the injected water has reached that particular monitor well as indicated by a decreasing trend in measured chloride or specific conductance levels resulting in more than a 10% decrease in the levels of these parameters from the levels measured during the first week of recovery.

****** Increased monitoring frequency only required if the Safe Drinking Water Standards (i.e., 10 ppb and 15 pCi/L for arsenic and gross alpha, respectively) are exceeded.

******* Monitoring only required if total and fecal coliform are detected at that particular monitoring location.

******** See Specific Condition 17 for additional mercury monitoring requirements during the recovery phase